<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<222> (13)..(13)
<223> Xaa can be any naturally occurring amino acid

<400> 2

Ser Pro Gly Pro Val Pro Pro Ser Thr Ala Leu Arg Xaa Leu Ile Glu
1 5 10 15

Glu Leu Val Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly
20 25 30

Ser Met Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala
35 40 45

Leu Glu Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Glu Lys Thr
50 55 60

Gln Arg Met Leu Ser Gly Phe Cys Pro His Lys Val Ser Ala Gly Gln
65 70 75 80

Phe Ser Ser Leu His Val Arg Asp Thr Lys Ile Glu Val Ala Gln Phe
85 90 95

Val Lys Asp Leu Leu Leu His Leu Lys Lys Leu Phe Arg Glu Gly Arg
100 105 110

Phe Asn

<210> 3
<211> 113
<212> PRT
<213> Murinae gen. sp.

<220>
<221> CHAIN
<222> (1)..(113)
<223> VARIABLE REGION OF LIGHT CHAIN OF MONOCLONAL ANTIBODY 228B/C

<400> 3

Asn Ile Val Leu Thr Gln Ser Pro Ala Ser Leu Ala Val Ser Leu Gly
1 5 10 15

Gln Arg Ala Thr Ile Ser Cys Arg Ala Ser Lys Ser Val Asp Ser Tyr
20 25 30

```
Gly Asn Ser Phe Met His Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
        35                  40                  45

Lys Leu Leu Ile Tyr Leu Ala Ser Asn Leu Glu Ser Gly Val Pro Ala
    50                  55                  60

Arg Phe Ser Gly Ser Gly Ser Arg Thr Asp Phe Thr Leu Thr Ile Asp
65                  70                  75                  80

Pro Val Glu Ala Asp Asp Ala Ala Ser Tyr Tyr Cys Gln Gln Asn Asn
                85                  90                  95

Glu Asp Pro Arg Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg
            100                 105                 110

Ala
```

<210> 4
<211> 118
<212> PRT
<213> Murinae gen. sp.

<220>
<221> CHAIN
<222> (1)..(118)
<223> VARIABLE REGION OF HEAVY CHAIN OF MONOCLONAL ANTIBODY 228B/C

<400> 4

```
Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Ala Pro Ser Gln
1               5                   10                  15

Ser Leu Ser Ile Thr Cys Thr Val Ser Gly Phe Ser Leu Asn Ala Tyr
            20                  25                  30

Ser Val Asn Trp Val Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Leu
        35                  40                  45

Gly Met Ile Trp Gly Asp Gly Lys Ile Val Tyr Asn Ser Ala Leu Lys
    50                  55                  60

Ser Arg Leu Asn Ile Ser Lys Asp Ser Ser Lys Ser Gln Val Phe Leu
65                  70                  75                  80

Lys Met Ser Ser Leu Gln Ser Asp Asp Thr Ala Arg Tyr Tyr Cys Ala
                85                  90                  95

Gly Asp Gly Tyr Tyr Pro Tyr Ala Met Asp Asn Trp Gly His Gly Thr
            100                 105                 110
```

Ser Val Thr Val Ser Ser
115

<210> 5
<211> 118
<212> PRT
<213> Murinae gen. sp.

<220>
<221> CHAIN
<222> (1)..(118)
<223> VARIABLE REGION OF LIGHT CHAIN OF MONOCLONAL ANTIBODY 228A-4

<400> 5

Gln Val Gln Leu Lys Glu Ser Gly Pro Gly Leu Val Ala Pro Ser Gln
1 5 10 15

Ser Leu Ser Ile Thr Cys Thr Val Ser Gly Phe Ser Leu Thr Asp Tyr
20 25 30

Asn Ile Asn Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Leu
35 40 45

Gly Met Ile Trp Gly Asp Gly Ser Thr Ala Tyr Asn Ser Ala Leu Lys
50 55 60

Ser Arg Leu Ser Ile Ser Lys Asp Asn Ser Lys Ser Gln Ile Phe Leu
65 70 75 80

Lys Met Asn Ser Leu Gln Thr Glu Asp Thr Ala Arg Tyr Tyr Cys Ala
85 90 95

Arg Asp Gly Tyr Phe Pro Tyr Ala Met Ala Tyr Trp Gly Gln Gly Thr
100 105 110

Ser Val Thr Val Ser Ser
115

<210> 6
<211> 118
<212> PRT
<213> Murinae gen. sp.

<220>
<221> CHAIN
<222> (1)..(118)
<223> VARIABLE REGION OF HEAVY CHAIN OF MONOCLONAL ANTIBODY 228A-4

<400> 6

Gln Val Gln Leu Lys Glu Ser Gly Pro Gly Leu Val Ala Pro Ser Gln

1 5 10 15

Ser Leu Ser Ile Thr Cys Thr Val Ser Gly Phe Ser Leu Thr Asp Tyr
20 25 30

Asn Ile Asn Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Leu
35 40 45

Gly Met Ile Trp Gly Asp Gly Ser Thr Ala Tyr Asn Ser Ala Leu Lys
50 55 60

Ser Arg Leu Ser Ile Ser Lys Asp Asn Ser Lys Ser Gln Ile Phe Leu
65 70 75 80

Lys Met Asn Ser Leu Gln Thr Glu Asp Thr Ala Arg Tyr Tyr Cys Ala
85 90 95

Arg Asp Gly Tyr Phe Pro Tyr Ala Met Ala Tyr Trp Gly Gln Gly Thr
100 105 110

Ser Val Thr Val Ser Ser
115

<210> 7
<211> 114
<212> PRT
<213> Murinae gen. sp.

<220>
<221> CHAIN
<222> (1)..(114)
<223> VARIABLE REGION OF LIGHT CHAIN OF MONOCLONAL ANTIBODY 227-26

<220>
<221> CHAIN
<222> (1)..(114)
<223> VARIABLE REGION OF LIGHT CHAIN OF MONOCLONAL ANTIBODY 227-26-1

<400> 7

Asp Val Leu Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly
1 5 10 15

Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser
20 25 30

Asn Gly Asn Thr Tyr Leu Gln Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35 40 45

Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
50 55 60

```
Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65                  70                  75                  80

Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly
                85                  90                  95

Ser His Val Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
            100                 105                 110

Arg Ala
```

<210> 8
<211> 120
<212> PRT
<213> Murinae gen. sp.

<220>
<221> CHAIN
<222> (1)..(120)
<223> VARIABLE REGION OF HEAVY CHAIN OF MONOCLONAL ANTIBODY 227-26-1

<400> 8

```
Gln Val Gln Leu Gln Gln Ser Gly Asp Asp Leu Val Leu Pro Gly Ala
1               5                   10                  15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
            20                  25                  30

Trp Ile Asn Trp Ile Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45

Gly His Ile Ala Pro Gly Ser Gly Ser Thr Tyr Phe Asn Glu Met Phe
    50                  55                  60

Lys Gly Lys Ala Thr Leu Thr Val Asp Thr Ser Ser Ser Thr Ala Tyr
65                  70                  75                  80

Ile Gln Leu Ser Ser Leu Ser Ser Glu Asp Ser Ala Val Tyr Phe Cys
                85                  90                  95

Ala Arg Ser Asp Ile Phe Leu Ser Tyr Ala Met Asp Tyr Trp Gly Gln
            100                 105                 110

Gly Thr Ser Val Thr Val Ser Ser
        115                 120
```

<210> 9
<211> 50

<212> DNA
<213> ARTIFICIAL

<220>
<223> Forward oligonucleotide primer for a mutant IL13 sequence

<400> 9
aagctttccc caggccctgt gcctccctct acagccctca ggaagctcat 50

<210> 10
<211> 30
<212> DNA
<213> ARTIFICIAL

<220>
<223> Reverse Oligo nucleotide primer of a mutant IL13 sequence

<400> 10
ctcgaggttg aaccgtccct cgcgaaaaag 30

<210> 11
<211> 22
<212> DNA
<213> ARTIFICIAL

<220>
<223> Forward degenerate oligonucleotide primer for monkey IL13

<400> 11
gyyctrggcy ycatggcgct yt 22

<210> 12
<211> 25
<212> DNA
<213> ARTIFICIAL

<220>
<223> Reverse degenerate oligonucleotide primer for monkey IL13

<400> 12
tttcagttga accgtccyty gcgaa 25

<210> 13
<211> 399
<212> DNA
<213> Macaca fascicularis

<400> 13
atggcgctct tgttgaccat ggtcattgct ctcacttgcc tcggcggctt tgcctcccca 60

agccctgtgc ctccctctac agccctcaag gagctcattg aggagctggt caacatcacc 120

cagaaccaga aggccccgct ctgcaatggc agcatggtgt ggagcatcaa cctgacagct 180

ggcgtgtact gtgcagccct ggaatccctg atcaacgtgt caggctgcag tgccatcgag 240

aagacccaga ggatgctgaa cggattctgc ccgcacaagg tctcagctgg gcagttttcc 300

agcttgcgtg tccgagacac caaaatcgag gtggcccagt ttgtaaagga cctgctcgta 360

catttaaaga aacttttttcg caatggacgg ttcaactga 399

<210> 14
<211> 34
<212> DNA
<213> ARTIFICIAL

<220>
<223> Forward oligonucleotide primer for cynomologus monkey IL13

<400> 14
aagcttcacc atggcgctct tgttgaccat ggtc 34

<210> 15
<211> 40
<212> DNA
<213> ARTIFICIAL

<220>
<223> Reverse oligonucleotide primer for cynomologus monkey IL13

<400> 15
tcacaagatc tgggctcctc gaggttgaac cgtccattgc 40

<210> 16
<211> 23
<212> DNA
<213> ARTIFICIAL

<220>
<223> Forward oligonucleotide primer for Fc gamma1

<400> 16
ctcgaggagc ccagatcttg tga 23

<210> 17
<211> 35
<212> DNA
<213> ARTIFICIAL

<220>
<223> Reverse oligonucleotide primer for Fc gamma 1

<400> 17
gctctagagc ctcatttacc cggagacagg gagag 35

<210> 18
<211> 8
<212> PRT
<213> ARTIFICIAL

<220>
<223> EPITOPE BINDING SITE

<400> 18

Glu Ser Leu Ile Asn Val Ser Gly
1 5

<210> 19
<211> 12
<212> PRT
<213> ARTIFICIAL

<220>
<223> EPITOPE BINDING SITE

<400> 19

Tyr Cys Ala Ala Leu Glu Ser Leu Ile Asn Val Ser
1 5 10

<210> 20
<211> 23
<212> PRT
<213> ARTIFICIAL

<220>
<223> FRL1 228B/C-1

<400> 20

Asn Ile Val Leu Thr Gln Ser Pro Ala Ser Leu Ala Val Ser Leu Gly
1 5 10 15

Gln Arg Ala Thr Ile Ser Cys
20

<210> 21
<211> 23
<212> PRT
<213> ARTIFICIAL

<220>
<223> FRL1 TEMPLATE HT2

<400> 21

Asp Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ser Val Ser Leu Gly
1 5 10 15

Glu Arg Ala Thr Ile Asn Cys
20

<210> 22
<211> 23
<212> PRT
<213> ARTIFICIAL

<220>
<223> FRL1 VARIANT B

<400> 22

Asp Ile Val Met Thr Gln Ser Pro Ala Ser Leu Ala Val Ser Leu Gly
1 5 10 15

Glu Arg Ala Thr Ile Asn Cys
20

<210> 23
<211> 23
<212> PRT
<213> ARTIFICIAL

<220>
<223> FRL1 VARIANT J

<400> 23

Asp Ile Val Leu Thr Gln Ser Pro Asp Ser Leu Ala Val Ser Leu Gly
1 5 10 15

Glu Arg Ala Thr Ile Asn Cys
20

<210> 24
<211> 23
<212> PRT
<213> ARTIFICIAL

<220>
<223> FRL1 VARIANT L

<400> 24

Asp Ile Val Leu Thr Gln Ser Pro Ala Ser Leu Ser Val Ser Leu Gly
1 5 10 15

Glu Arg Ala Thr Ile Asn Cys
20

<210> 25
<211> 23
<212> PRT
<213> ARTIFICIAL

<220>
<223> FRL1 VARIANT HT-NEW #300

<400> 25

Asp Ile Val Leu Thr Gln Ser Pro Asp Ser Leu Ser Val Ser Leu Gly
1 5 10 15

Glu Arg Ala Thr Ile Asn Cys
20

<210> 26
<211> 23
<212> PRT
<213> ARTIFICIAL

<220>
<223> FRL1 VARIANT HT2-DP27 #29

<400> 26

Asp Ile Val Leu Thr Gln Ser Pro Val Ser Leu Ala Val Ser Leu Gly
1 5 10 15

Glu Arg Ala Thr Ile Asn Cys
20

<210> 27
<211> 23
<212> PRT
<213> ARTIFICIAL

<220>
<223> FRL1 VARIANT HT2-DP27 #53

<400> 27

Asp Ile Val Met Thr Gln Ser Pro Ala Ser Leu Ser Val Ser Leu Gly
1 5 10 15

Glu Arg Ala Thr Ile Asn Cys
20

<210> 28
<211> 23
<212> PRT
<213> ARTIFICIAL

<220>
<223> FRL1 VARIANT HT2-DP27 #66

<400> 28

Asp Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val Ser Leu Gly
1 5 10 15

Glu Arg Ala Thr Ile Asn Cys
20

<210> 29
<211> 15
<212> PRT
<213> ARTIFICIAL

<220>
<223> FRL2 228B/C

<400> 29

Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu Ile Tyr
1 5 10 15

<210> 30

<211> 32
<212> PRT
<213> ARTIFICIAL

<220>
<223> FRL3 288 B/C

<400> 30

Gly Val Pro Ala Arg Phe Ser Gly Ser Gly Ser Arg Thr Asp Phe Thr
1 5 10 15

Leu Thr Ile Asp Pro Val Glu Ala Asp Asp Ala Ala Ser Tyr Tyr Cys
20 25 30

<210> 31
<211> 32
<212> PRT
<213> ARTIFICIAL

<220>
<223> FRL3 HT2

<400> 31

Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
1 5 10 15

Leu Thr Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys
20 25 30

<210> 32
<211> 32
<212> PRT
<213> ARTIFICIAL

<220>
<223> FRL3 VARIANT B

<400> 32

Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
1 5 10 15

Leu Thr Ile Asp Pro Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys
20 25 30

<210> 33
<211> 32
<212> PRT
<213> ARTIFICIAL

<220>
<223> FRL3 VARIANT J

<400> 33

Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr

1 5 10 15

Leu Thr Ile Asp Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys
20 25 30

<210> 34
<211> 32
<212> PRT
<213> ARTIFICIAL

<220>
<223> FRL3 VARIANT L

<400> 34

Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Arg Thr Asp Phe Thr
1 5 10 15

Leu Thr Ile Asp Pro Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys
20 25 30

<210> 35
<211> 32
<212> PRT
<213> ARTIFICIAL

<220>
<223> FRL3 VARIANT N

<400> 35

Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Arg Thr Asp Phe Thr
1 5 10 15

Leu Thr Ile Asp Pro Val Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys
20 25 30

<210> 36
<211> 32
<212> PRT
<213> ARTIFICIAL

<220>
<223> FRL3 VARIANT P

<400> 36

Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Arg Thr Asp Phe Thr
1 5 10 15

Leu Thr Ile Asp Ser Val Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys
20 25 30

<210> 37
<211> 32
<212> PRT